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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/552,316

06/09/2006

Paul Charles Wong

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WOOD, PHILLIPS, KATZ, CLARK & MORTIMER
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CHICAGO, IL 60661

EXAMINER

MCCALL SHEPARD, SONYA D

ART UNIT

PAPER NUMBER

2813

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/552,316	Applicant(s) WONG ET AL.	
	Examiner SONYA D. MCCALL SHEPARD	Art Unit 2813	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 February 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-65 is/are pending in the application.
- 4a) Of the above claim(s) 10-65 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 October 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>10/7/05, 3/3/08</u> | 6) <input type="checkbox"/> Other: _____ |

Detailed Action

This office action is in response to applicant's election filed on 13 February 2008. Claims 1-9 are pending, claims 10-65 have been withdrawn.

Election/Restrictions

1. Applicant's election with traverse of claims 1-9 in the reply filed on 13 February 2008 is acknowledged. The traversal is on the ground(s) that claims 10-18, an apparatus for separating elongated semiconductor strips from a wafer of semiconductor material should be included with the invention drawn to a method claims 1-9, a method of separating elongated semiconductor strips from a wafer of semiconductor material. This is not found persuasive because of the burden of search which is shown by one of the following:

a)the separate classifications of the two inventions the search is not coexistent as evidenced by the different fields of search for the process and product as cited in the restriction mailed on 11 January 2008.

b)even though they are classified together, each invention can be shown to have formed a separate subject for inventive effort (i.e. process and apparatus). Separate status in the art may be shown by citing patents which are evidence of such separate status, and also of a separate field of search.

c)where it is necessary to search for one of the inventions in a manner that is not likely to result in finding art pertinent to the other invention(s) (e.g., searching different classes/subclasses or electronic resources, or employing different search queries) , a

different field of search is shown, even though the two are classified together. The indicated different field of search must in fact be pertinent to the type of subject matter covered by the claims.

The requirement is still deemed proper and is therefore made FINAL.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1-6 and 9 rejected under 35 U.S.C. 103(a) as obvious over Weber et al. (US 2004/0097012).

With regard to claim 1, Weber et al. disclose a method of separating elongated semiconductor strips from a wafer of semiconductor material, said method comprising the steps of: providing a plurality of elongated semiconductor strips formed in a wafer in a substantially parallel manner with respect to each other, said wafer having a substantially planar surface and a thickness dimension at a right angle to the substantially planar surface and a frame portion at opposite ends of said semiconductor strips connecting said strips to said wafer, said semiconductor strips each having a width at least substantially equal to the wafer thickness and a thickness dimension of said strip less than said width, a face of at least one of elongated semiconductor strips lengthwise forming an edge of said wafer or being nearest adjacent said edge (fig. 1 (a,b)).

Weber et al. teaches separating strips of a wafer using a dicing saw therefore in teaching this step the reference teaches applying vacuum to said elongated semiconductor strip forming said edge or being adjacent to said edge; and displacing said wafer and a source of said vacuum relative to each other a predetermined distance to separate said elongated semiconductor strip having vacuum applied to said elongated semiconductor strip from said wafer (paragraph 28). It would be obvious to one having ordinary skill in the art at the time the invention was made to use a vacuum

as a part of a dicing saw setup since it is well known in the art to use a vacuum attached to a dicing saw to separate semiconductor strips of a wafer and to move the wafer and vacuum setup a certain distance to separate the strips from the wafer.

With regard to claim 2, Weber in using a dicing saw implicitly teach at least reducing said vacuum applied to said separated, elongated semiconductor strip; and displacing said separated, elongated semiconductor strip and said source of said vacuum relative to each other (paragraph 28).

With regard to claim 3, Weber in using a dicing saw implicitly teach a step of at least reducing said vacuum comprises terminating said vacuum (paragraph 28).

With regard to claim 4, Weber in using a dicing saw implicitly teach a step of moving said wafer so that said elongated semiconductor strip is in close proximity to said source of said vacuum (paragraph 28).

With regard to claim 5, Weber in using a dicing saw implicitly teach a step of moving said source of said vacuum relative to said wafer so that said source of said vacuum is in close proximity to said elongated semiconductor strip (paragraph 28).

With regard to claim 6, Weber teach steps are repeatedly performed to separate two or more of said plurality of said elongated semiconductor strips from said wafer (paragraph 28).

With regard to claim 9, Weber discloses a single crystal silicon or multicrystalline silicon wafer (paragraph 37).

5. Claims 7-8 rejected under 35 U.S.C. 103(a) as being unpatentable over Weber et al. (US 2004/0097012) as applied to claim 1 above, and further in view of Tsuji et al. (US 6,106,222).

With regard to claim 7, Weber et al. disclose the claimed subject matter except a source of said vacuum has a body with at least one cavity formed therein for providing said applied vacuum, said cavity adjacent said elongated semiconductor strip being substantially the same in size as or smaller than a dimension of a face of said elongated semiconductor strip. Tsuji et al. teach a method of separating chips using a vacuum source with holes formed therein adjacent strips being substantially the same size or smaller than dimension of a face of said elongated semiconductor strip (col. 4, lines 20-44; fig. 4). It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the process of using the vacuum source of Tsuji et al. in the process of Weber et al. The motivation for doing so is to use a technique for reliably removing strips from a wafer.

With regard to claim 8, Tsuji et al. teach a step of forming weak points in portions of said wafer adjacent opposite ends of said elongated semiconductor strips to facilitate separation of said elongated semiconductor strip from said wafer (abstract).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SONYA D. MCCALL SHEPARD whose telephone

number is (571)272-9801. The examiner can normally be reached on Monday - Friday 8:00-4:30 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carl Whitehead, Jr. can be reached on 571-272-1702. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Carl Whitehead Jr./
Supervisory Patent Examiner, Art Unit 2813

/S. D. M./
Examiner, Art Unit 2813